



# **Libraries of Silicon and Fiber Optics**

**Brewster Kahle**

**Thinking Machines Corporation**

**May 30, 1992**



**Thinking Machines Corporation**

# **Wide Area Information Servers Applications**

- **PeatMarwick DowJones Apple  
Thinking Machines Joint Project**
- **U.S. Geological Survey**
- **Network Services**
- **Thinking Machines Corporation**
- **Columbia Law Library**
- **WAIS on Internet**

## **Future Libraries**

- **Reading Rooms**
- **Corporate Libraries**

# **Peat Marwick / Dow Jones / Apple / Thinking Machines Joint Project**

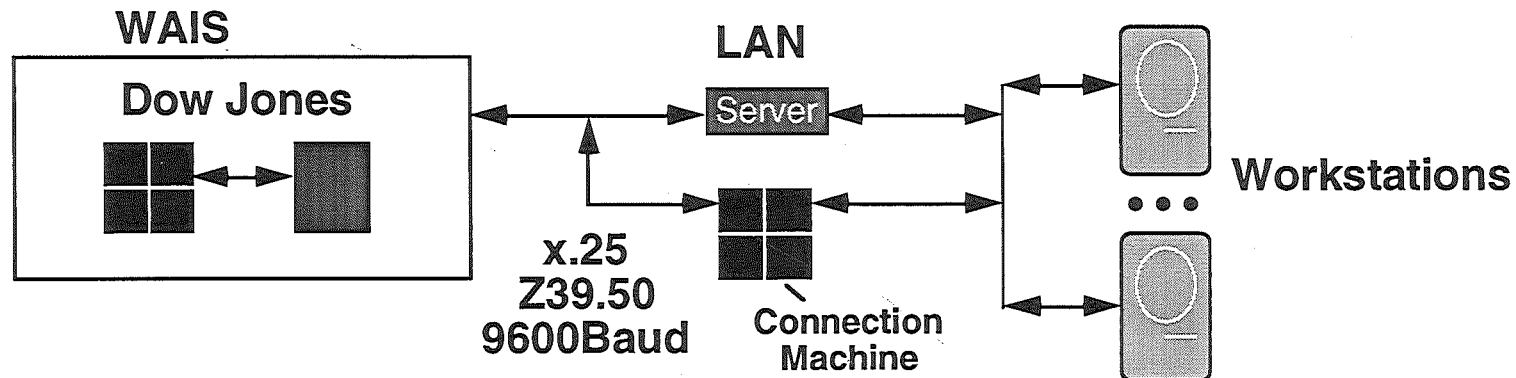
## **Problem:**

**Accountants and Tax Consultants need access to up-to-date information from inside the company and outside.**

## **Answer:**

**Use a wide area network with WAIS servers to allow easy access to personal, corporate and published information.**

# Peat Marwick System Structure

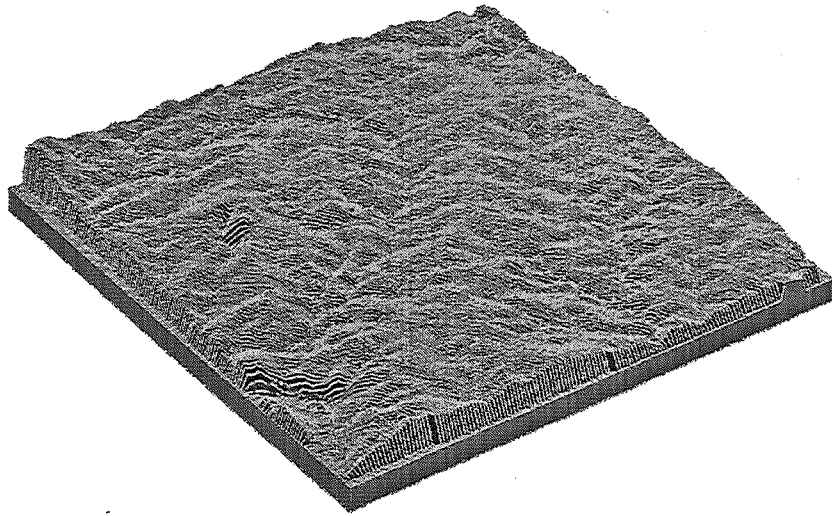


**Operations:**  
 Archiving  
 Queries  
 Retrieval  
**IR Type:**  
 Broadcast  
 Query by Example  
**Databases:**  
 Wall St Journal  
 Barron's  
 400 Business Mags

**CM:**  
**Operations:**  
 Queries  
**IR Type:**  
 enhanced relevance  
 feedback  
**Databases:**  
 DowVision and memo's,  
 mail, word processor files

**Mac:**  
**Operations:**  
 Human Int  
 Retrieval  
 Queries  
 "Caching" Docs  
 User Profiles  
**IR Type:**  
 Query by example  
**Databases:**  
 Personal Text  
 Cached data

# U.S. Geological Survey



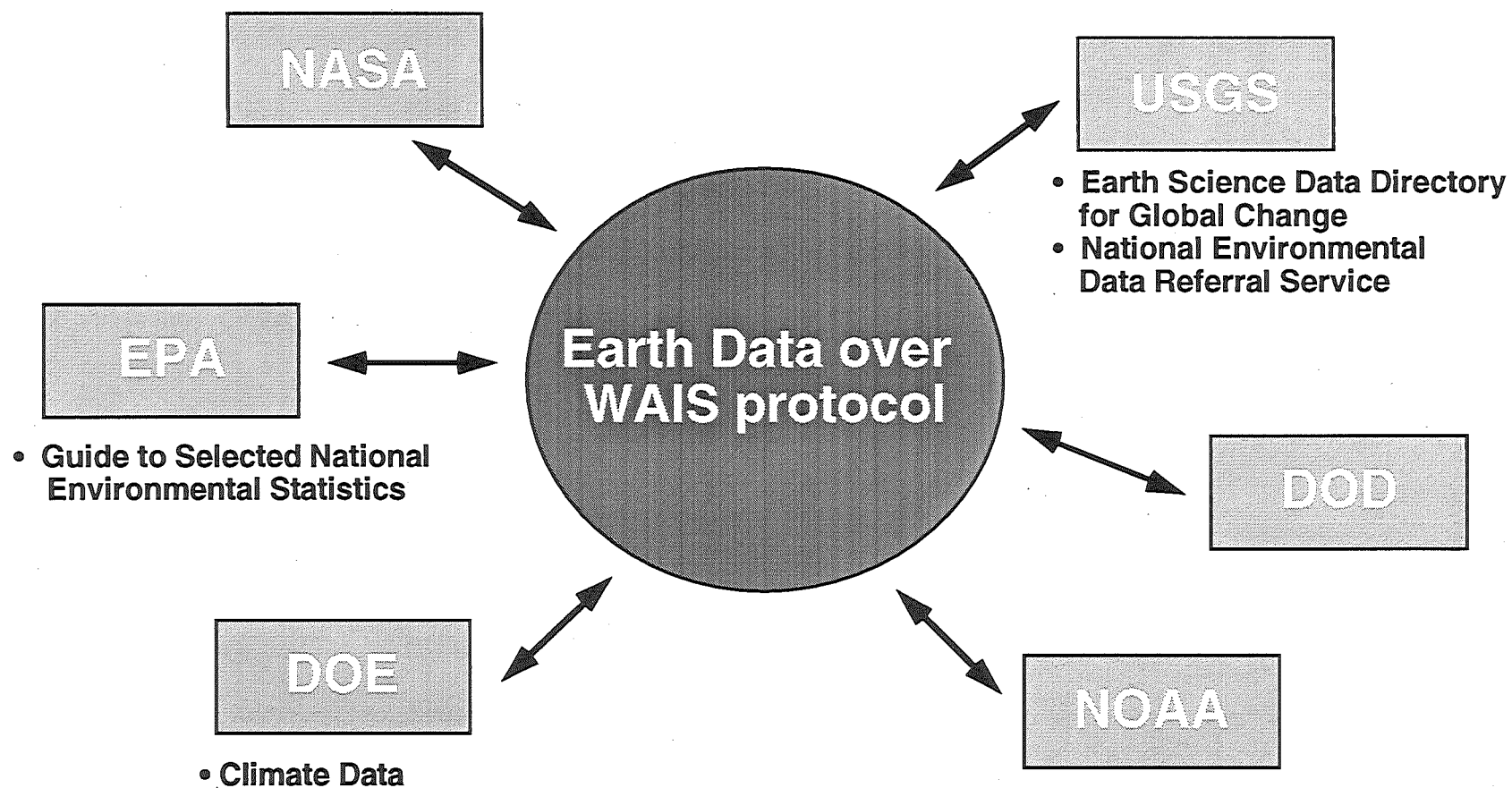
## Problem with Earth Data:

- Data in multiple agencies
- Data in different systems

## Answer:

- Use WAIS protocol
- Data stays with creators

# U.S. Geological Survey



# Network Services

## **Problem:**

- **Finding resources on networks**

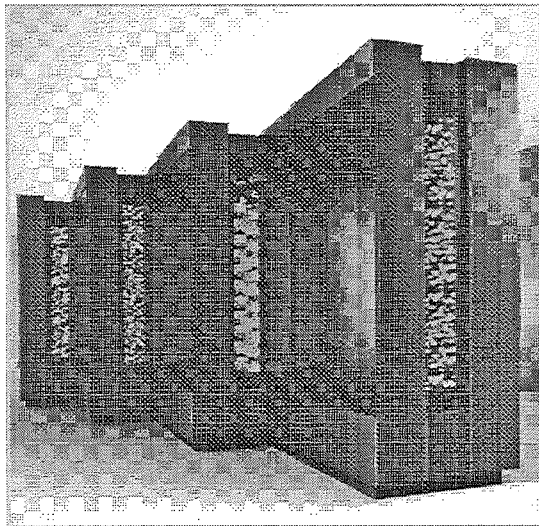
## **Answer:**

- **Finding people: 5 different WAIS servers**
- **Finding software: 7 different WAIS servers**
- **Mailing lists and newsgroups: 3 WAIS servers**

**Operated by Ed Vialmetti, consultant to CICNet.**

- **15 widely used databases, 50 total**
- **500MBytes Unix workstation**
- **500 questions per day**
- **10 hours/week of Ed's time**

# Thinking Machines Corporation



## **Problem:**

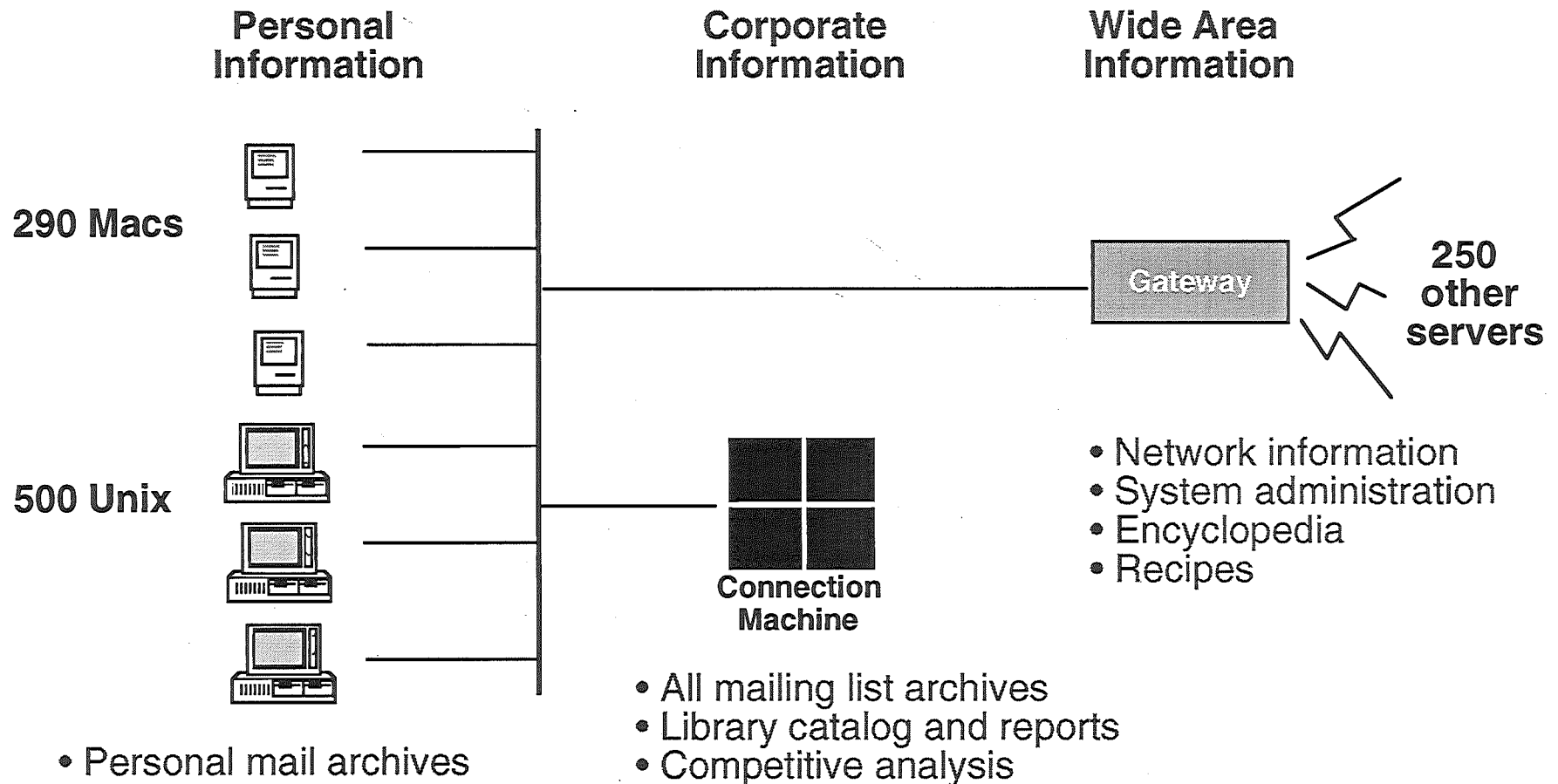
- **Keeping people informed even though the employees are all over the world and use different machines.**

## **Answer:**

- **Use a Connection Machine as our corporate memory of company information and contacts.**



# Thinking Machines System



# **Columbia Law Library**

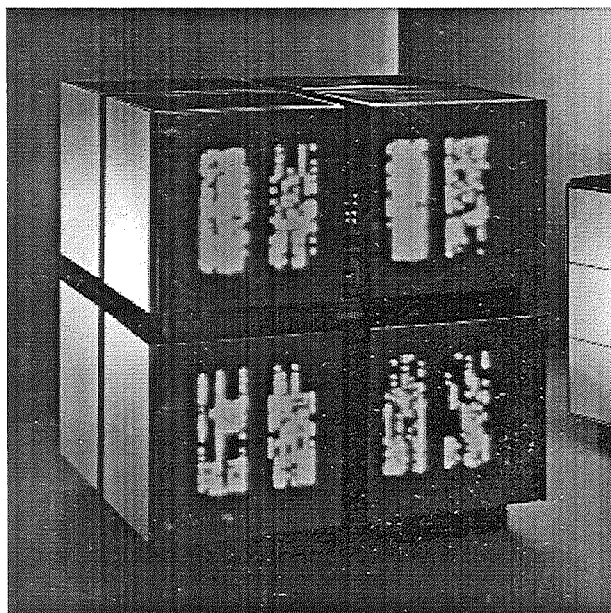
## **Problem:**

- **They need more space, but no more buildings are allowed.**
- **Their students want online access.**

## **Answer:**

- **Use a Connection Machine for catalog and special collections of text and images.**
- **Use direct lines to Mead and WestLaw for other material.**

# Columbia Law Library System



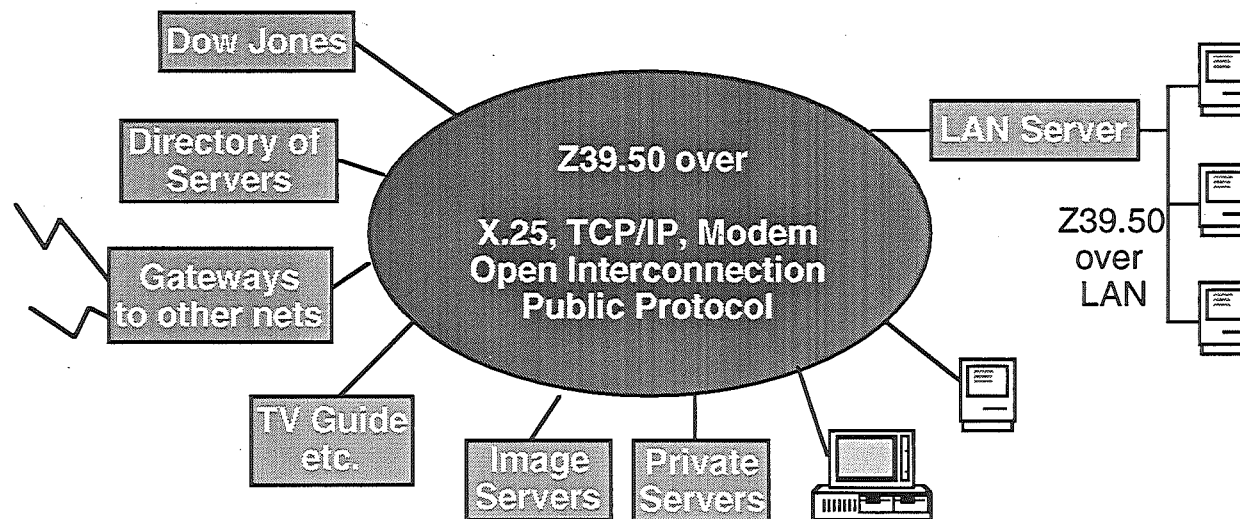
- Nuremberg Trials
- Rosenberg Trial
- United Nations Publications
- Catalog

Reference Desk

Dormitories

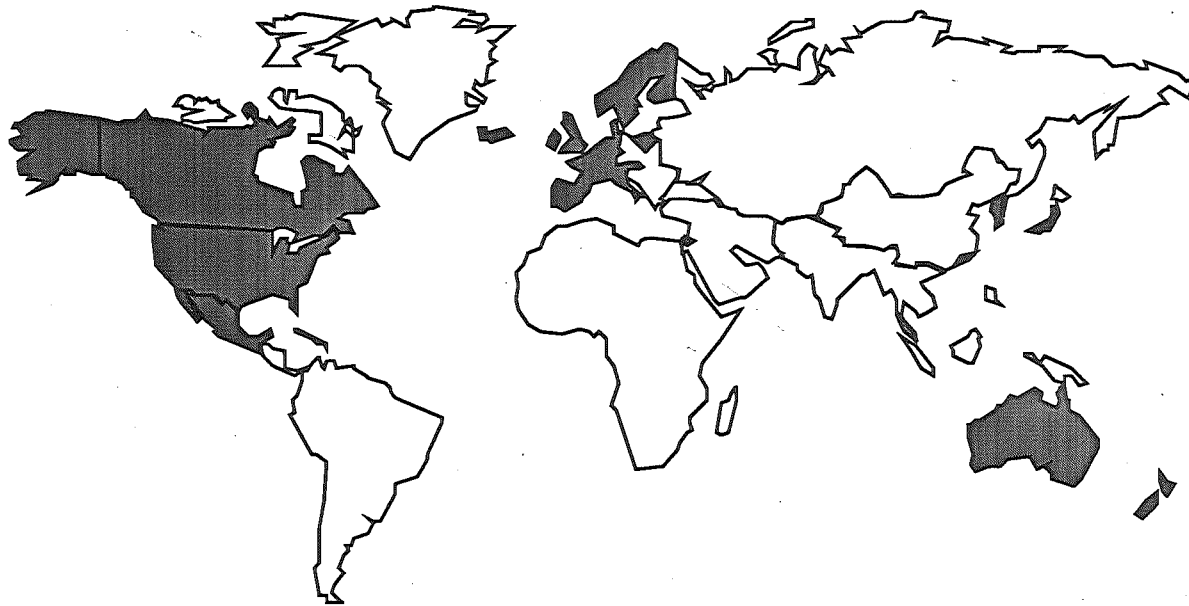
Campus  
Networks

# WAIS: Wide Area Information Servers



**Easy point-and-click interface to worldwide information**

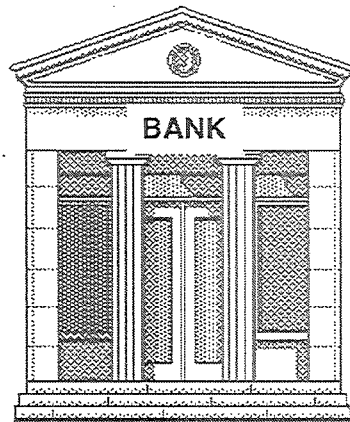
# WAIS on Internet



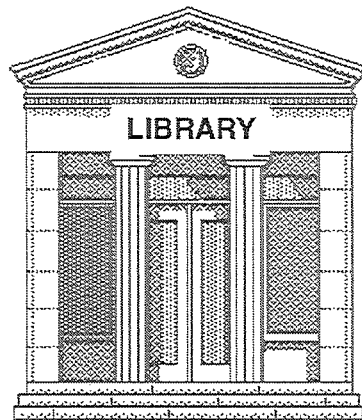
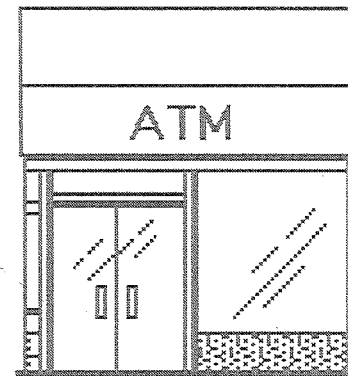
- Over 14,000 users on the Internet
- Users in 28 Countries: Mexico, Singapore, Finland, Australia, . . .
- 250 Databases served from 12 Countries: Norway, Canada, UK, . . . New database every day.
- VT-100 Interface in California: 240 each day, 4,600 different machines

Thinking Machines Corporation

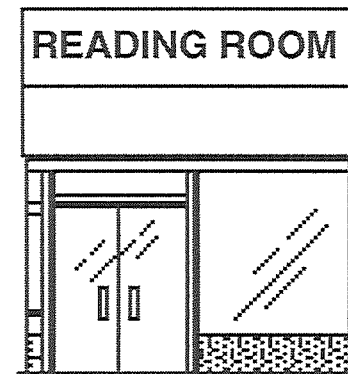
# Branch Libraries become Reading Rooms



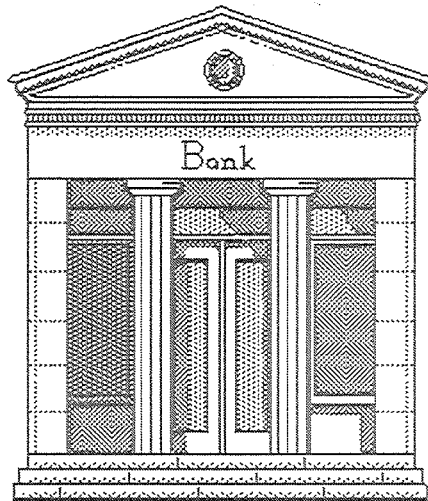
*became*



*might become*



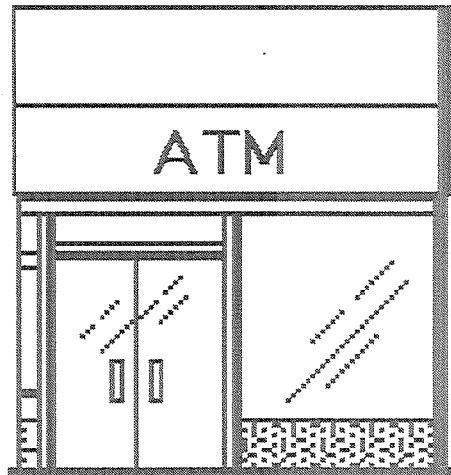
# Banks: Before and After



## Old Banks

- Centrally located
- Limited hours
- Local information
- Physical savings books
- Used rarely

# Banks: Before and After

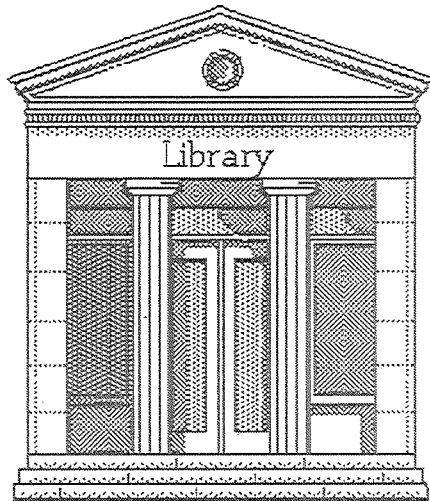


## Automatic Teller Machines

- Everywhere
- Available all the time
- Global information
- Access cards
- Constantly used



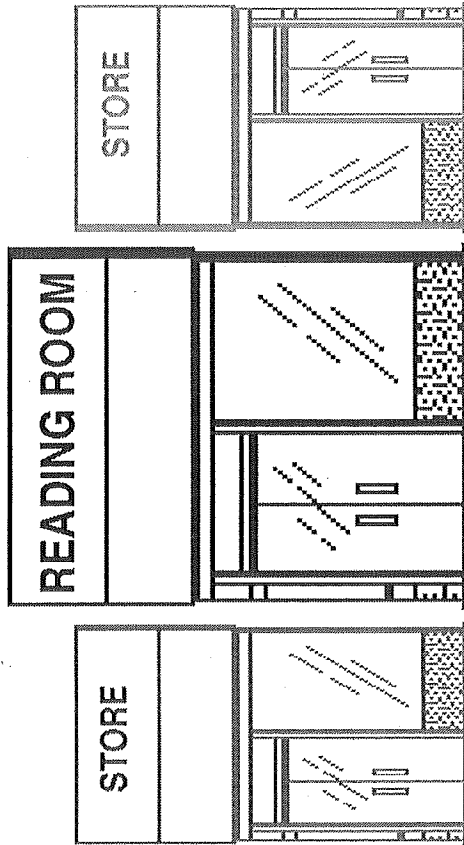
# Libraries: Now and Future?



## Libraries

- Centrally located
- Limited hours
- Local information
- Physical library cards

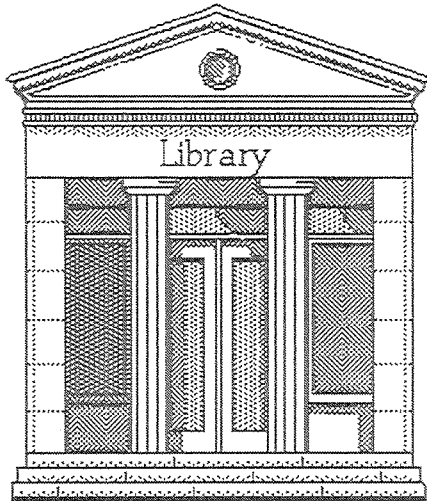
# Libraries: Now and Future?



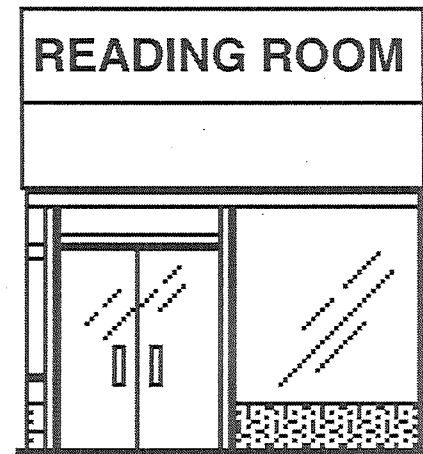
## Reading Rooms

- Everywhere
- Available all the time
- Global information
- Access cards

**... but still similar.**



**Helpful librarians**  
**Comfortable reading**  
**chairs**  
**Current fiction**  
**Easy browsing**



**Helpful librarians**  
**Comfortable reading**  
**chairs**  
**Current fiction**  
**Easy browsing**

# **Conclusion: WAIS Applications**

- **Automating the "Good old boy network"**
- **Corporate memory**
- **Virtual libraries of text and images**
- **Helping customer support**
- **Government information sharing**